BALLOON IN A BOTTLE

Some things look so easy until you try them. Case in point... how hard would it be to inflate a balloon in a plastic soda bottle? Hey, no big deal. Just put the balloon down inside the bottle and puff away. That's until you realize something about the properties of air. Don't worry... Steve Spangler will show you how to be amazing.

###### **MATERIALS**

* 1-liter bottles (Some with a hole in the bottom)
* Latex balloons

###### **EXPERIMENT**

1. Slip the balloon inside the neck of the bottle (non-cut) and stretch the mouth of the balloon over the bottle top.
2. Take a deep breath and try to blow up the balloon inside the bottle. Good luck!
3. Place the balloon on a bottle (cut)) and try to blow up the balloon. Quite a difference! Blow hard until the balloon fills most of the bottle. Place a finger (or thumb) over the hole when you stop blowing. You are too cool! Now, move your finger.

###### **HOW DOES IT WORK?**

The balloon won't inflate much the first time because the bottle is already filled with air. There's no room for the balloon to expand inside the bottle. However, when there is a hole in the bottle, the air molecules in the bottle have an exit. They're pushed out as the balloon fills the space inside. As long as you plug the hole, the balloon stays inflated. When you take your thumb off the hole, outside air flows back into the bottle as the balloon collapses. Because of the elasticity of the rubber or latex, the balloon shrinks to its original size as the air rushes out the top of the bottle. Who'd ever think that flowing, soft water could give that much support?